<table>
<thead>
<tr>
<th>SESSIONS:</th>
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<tbody>
<tr>
<td>Questions &amp; Answer Session for Contractors</td>
<td>36</td>
</tr>
<tr>
<td>Concrete Design with Micro Computers (Part I)</td>
<td>37</td>
</tr>
<tr>
<td>Open Paper Session</td>
<td>38</td>
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<tr>
<td>Concrete Shells Constructed on Air-Supported Forming</td>
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<tr>
<td>Concrete Design with Micro Computers (Part II)</td>
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<tr>
<td>Precast Concrete Buildings: The State of the Art</td>
<td>41</td>
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<tr>
<td>Repair of Prestressed Concrete Structures</td>
<td>42</td>
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<tr>
<td>Philosophy of Structural Safety</td>
<td>43</td>
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<tr>
<td>Wall Panels - Why Denver is the #1 Precast City</td>
<td>44</td>
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<tr>
<td>Precast Bridges (Part I)</td>
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<td>Precast Concrete</td>
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<td>Adhesives for Concrete</td>
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<td>48</td>
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<td>Research in Progress</td>
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<td>Precast Fiber Reinforced Concrete</td>
<td>52</td>
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<td>Non-Chloride Accelerators</td>
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<td>Forum: The Chloride Issue - The New Limits</td>
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<td>Chloride-Induced Corrosion of Steel in Concrete</td>
<td>56</td>
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<tr>
<td>Use of Computers for Statistical Analysis of Test Data</td>
<td>57</td>
</tr>
<tr>
<td>Inelastic Response of Concrete Structures</td>
<td>58</td>
</tr>
<tr>
<td>Tilt Up Construction</td>
<td>59</td>
</tr>
</tbody>
</table>
REGISTRATION

The ACI staff is eager to answer any questions you may have pertaining to the convention.

The registration desk is open to serve you:

<table>
<thead>
<tr>
<th>Day</th>
<th>March 24</th>
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Fees:

- Member: $105.00 (full week)
- Nonmember: $120.00 (full week)
- One-day Member: $45.00 (per day)
- One-day Nonmember: $50.00 (per day)
- Student: Free

Registration fees cover attendance at all ACI technical and educational committee meetings, general session, and forums. Also, the Concrete Mixer ticket is included in the full week registration fee.

For those who plan to attend the following seminar, there is no fee for attendance, but we do request payment for handout material:

Concrete Design with Micro Computers
- Handout Material Fee $24.00

Awards Breakfast

Thursday, March 28, 1985
8:00 am-10:00 am
Awards Breakfast
Cost $10.00

Come meet the awardees. Have fun, enjoy a good breakfast, and watch the multi-media awards presentation. Please purchase tickets at the registration desk.

Badges

Wear your badge on the right side at all times. (In shaking hands the eyes normally fall at shoulder level on the right side of the individual being greeted.) The convention badges are color coded for identification.

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<td>Spouse</td>
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March, 1985

Dear ACI Convention Delegates:

The American Concrete Institute's March convention in Denver, Colo., promises to be an exciting event. Denver is a city on the move and abounds in scenic attractions and things to do and see.

The convention theme is precast construction but the technical program will not be limited to this one subject by any means. And don't forget about the annual Awards Breakfast and the General Session.

For the spouses, a week-long series of tours and hospitality events has been arranged. Of course, members as well as their spouses are encouraged to sign up for these.

I welcome ACI members, their spouses, and other convention attendees — our meeting in Denver, the mile-high city, should be one of the Institute's best ever. I look forward to meeting all of you there.

Best Regards,

Ignacio Martín
President
American Concrete Institute
March 24, 1985

To the participants of the American Concrete Institute Convention:

On behalf of the residents of the State of Colorado, I am pleased to welcome you to Denver for the annual American Concrete Institute Convention.

Our mile-high city offers a variety of cultural and recreational opportunities. I hope you will spend some time enjoying the scenic beauty of Colorado.

Have a most pleasant stay in our state.

Sincerely,

Richard D. Lamm
Governor
March, 1985

Welcome to Denver!

I am pleased to extend a warm Western welcome to all in attendance at the 1985 Annual Convention of the American Concrete Institute, meeting in Denver the week of March 24-29.

I am well acquainted with the goals of your fine organization and commend and congratulate all members for their contributions, individually and as members of the ACI, to their respective communities. Your activities planned for 1985 will be important and interesting to all who are involved in the concrete industry, and I am confident your deliberations in Denver this week will contribute to the laying of foundations for greater design, construction and manufacture of concrete products and structures.

I was very interested in reading the preview of your convention and hope that it is the best you've ever held. I hope all delegates, family members, and guests of the convention will also enjoy the numerous recreational and cultural facilities which our city has to offer, and that the American Concrete Institute will return to Denver again and again.

Sincerely,

Federico Peña
Mayor
SCHEDULE

Annual Convention

SUNDAY, March 24, 1985
1:00 pm- 5:00 pm     Registration Hours
5:30 pm- 7:00 pm     Wine & Cheese Party - Sponsored by the Rocky Mountain Chapter

MONDAY, March 25, 1985
8:00 am- 5:00 pm     Registration Hours
8:30 am- 9:30 pm     Administrative, Technical and Educational Committee Meetings

TUESDAY, March 26, 1985
8:00 am- 5:00 pm     Registration Hours
8:30 am- 9:30 pm     Administrative, Technical and Educational Committee Meetings
9:00 am-12:00 pm     Technical Sessions:
                      • Question and Answer Session for Contractors
                      • Concrete Design for Micro Computers (Part I)
10:00 am- 5:00 pm     All Day Film Session
2:00 pm- 5:00 pm     Technical Sessions:
                      • Open Paper Session
                      • Concrete Shells Constructed on Air-Supported Forming
                      • Concrete Design for Micro Computers (Part II)
                      • Precast Concrete Buildings: The State of the Art
WEDNESDAY, March 27, 1985
8:00 am- 5:00 pm  Registration Hours
8:30 am- 9:30 pm  Technical Committee Meetings
9:00 am-12:00 pm Technical Sessions:
  • Repair of Prestressed Concrete Structures
  • Philosophy of Structural Safety
  • Wall Panels - Why Denver Is The #1 Precast City
  • Precast Bridges (Part I)
2:00 pm- 5:00 pm  Technical Sessions:
  • Precast Concrete
  • Adhesives for Concrete
  • Precast Bridges (Part II)
  • Research in Progress
6:30 pm- 8:00 pm  Concrete Mixer (Reception)

THURSDAY, March 28, 1985
8:00 am- 5:00 pm  Registration Hours
8:00 am-10:00 am Awards Breakfast
10:00 am-12:00 pm General Session
2:00 pm- 5:00 pm  Technical Sessions:
  • Precast Fiber Reinforced Concrete
  • Non-Chloride Accelerators
  • Precast Parking Structures
2:00 pm- 9:30 pm  Technical Committee Meetings
2:00 pm- 4:00 pm  Forney/ACI Cube Strength Contest
4:00 pm- 6:00 pm  Student Program
7:30 pm-10:00 pm Forum: The Chloride Issue-The New Limits

FRIDAY, March 29, 1985
8:00 am-10:30 am  Registration Hours
8:30 am-12:30 pm  Technical Committee Meetings
9:00 am-12:00 pm Technical Sessions:
  • Chloride-Induced Corrosion of Steel in Concrete
  • Use of Computers for Statistical Analysis of Test Data
  • Inelastic Response of Concrete Structures
  • Tilt-Up Construction
SPECIAL EVENTS

PUBLICATION DISPLAY
Sunday through Friday
See the latest ACI publications now available. Orders taken at the ACI registration desk.

COFFEE BAR
Monday through Friday
8:00 am - 10:00 am
ACI Registration Area
Join your colleagues every morning for coffee and tea (complimentary) in the registration area.

4:30 REHABILITATION (Cash Bar)
Tuesday, March 26, 1985
4:30 pm - 6:30 pm
ACI Registration Area
Rest, relax and restore-the day’s meetings are now behind you and the evening is young. Join your colleagues in the Registration Area where a cash bar has been set up for your pleasure.

CONCRETE MIXER
Wednesday, March 27, 1985
6:30 pm - 8:00 pm
Colorado Ballroom
All delegates and guests are cordially invited to attend our traditional convention social. (All full-week registrants have received a complimentary mixer ticket upon registration. Others may purchase tickets at the registration desk.)

AWARDS BREAKFAST
Thursday, March 28, 1985
8:00 am - 10:00 am
Colorado A - E
Cost: $10.00
Come meet the Awardees. Have fun, enjoy a good breakfast and watch the multi-media awards presentation.
Please purchase tickets before Wednesday afternoon.
GENERAL SESSION
Thursday, March 28, 1985
10:00 am - 12:00 pm
Presidential Address
Ignacio Martin, Partner, Capacete, Martin & Associates, San Juan, Puerto Rico
Keynote Speaker
Leonard M. Perlmutter, Chairman of the Board, Stanley Structures, Denver, Colorado
Please refer to page 51 for further details.

BREAKFAST MEETINGS (by invitation only)
Tuesday, March 26, 1985 7:00 a.m.
Technical Chairmen Training

Wednesday, March 27, 1985 7:00 a.m.
Chicago Speakers/Chairmen Training

Wednesday, March 27, 1985 7:00 a.m.
Coordination of Constructability

LADIES PROGRAM
A program has been planned for the women, but is not exclusive to them. Check the program in the back of this booklet. There is something of interest for everyone!

FIRST TIME CONVENTION ATTENDEES
Monday through Thursday ACI Registration Area
Is this your first ACI Convention? Would you like to know more about ACI? Bring your questions to the information table set up in the ACI Registration Area in the Prefunction Area.

POSTER SESSION
Wednesday, March 27, 1985 Registration Area
10:00 am - 12:00 pm
Come enjoy a cup of coffee and view the posters. Refer to page 28 for details.
ROCKY MOUNTAIN
CONVENTION
COMMITTEE

General Chairman
Robert T. Bates
Meurer & Associates

Executive Committee Chairmen
Finance: Fred Groom, Walt Flanagan & Company
Concrete Mixer: Jack Janney, Janney Associates, Inc.
       VIP Reception: Paul Albright, Master Builders
       Special Events: Roger Kaness, S. A. Miro Inc.

Finance
Fred Groom
Don Thorpe
Ed McGinty
Pres Fraker

Concrete Mixer
Jack Janney
Stan Smith
Joe Mitchell
Vic Land
Ray Schultz

VIP Reception
Paul Albright
Sam Kelley
Larry Cole
Jack Horn
Bill Gearhart
Steve Close
David Cantrell
Ed Hedstrom
Paul Kelley
Bob McCabe
Bob Haggerty
Rachel Stifler

Special Events
Roger Kaness
Vic Land
Karen Woods
Steve Jirsa
John Claude Romain
Pres Fraker
Alberta Hedstrom
Lois Kaness
Tony Murray
Lona Prebis
Wally Prebis

Advisor: Pres Fraker
Secretary: Ed McGinty
Treasurer: Don Thorpe
Advisor: Bob Fiorey

The officers, staff, and members of ACI would like to thank
the Local Convention Committee, the Hostesses and the
Rocky Mountain Chapter for their contribution to a
successful 1985 Annual Convention.

THANK YOU
ACI
ROCKY MOUNTAIN
CHAPTER OFFICERS

President
Robert T. Bates
Meurer & Associates

Vice President
Roger H. Kaness
S. A. Miro Incorporated

Past President
Steven T. Jirsa
Structural Consultants

Secretary-Treasurer
Frederick Groom
City Concrete Company

Directors
Jack O. Banning
Mobile Pre Mix Concrete

Jack R. Janney
Wiss, Janney, Elstner & Company

Donald Thorpe
Al Cohen Construction Company
# PROGRAM COMMITTEE MEETINGS

Be sure to check the bulletin board for last minute changes or added meetings.

<table>
<thead>
<tr>
<th>SATURDAY/SUNDAY/MONDAY</th>
</tr>
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<tbody>
<tr>
<td><strong>DAY/TIME</strong></td>
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<tr>
<td><strong>SATURDAY, March 23, 1985</strong></td>
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</table>

| **SUNDAY, March 24, 1985** | 8:00 am- 6:00 pm | Technical Activities Committee (WG) | Denver II |
|                          |              | Technical Activities Committee (WG) | Denver III |
|                          |              | Technical Activities Committee (WG) | Denver V |
|                          |              | Technical Activities Committee (WG) | Denver VI |

|                          | 9:00 am- 6:00 pm | Educational Activities Committee (7 hrs) | Denver IV |
|                          |             | Planning Committee (7 hrs) | Matchless |

| **MONDAY, March 25, 1985** | 8:00 am- 1:00 pm | Technical Activities Committee (Full) | Denver III |

|                          | 8:30 am-10:30 am | Construction Practices (4 hrs) | Saratoga |
|                          |                | Field Tech I (4 hrs) | Suite 304 |
|                          |                | Lab Tech I (8 hrs) | Pomeroy |
|                          |                | Concrete Insp.-General (8 hrs) | Silverheels |
|                          |                | Shotcrete Nozzleman (4 hrs) | Suite 316 |
|                          |                | History (2 hrs) | Goldcoin |
|                          |                | Mass Concrete (4 hrs) | Colorado I |

* Reconvening Meeting
( ) Total Duration of Meeting
<table>
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<th>DAY/TIME</th>
<th>FUNCTION</th>
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<tr>
<td>211-B</td>
<td>Lightweight (2 hrs)</td>
<td>Nat Hill</td>
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<tr>
<td>212</td>
<td>Chemical Admixtures (4 hrs)</td>
<td>Denver VI</td>
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<tr>
<td>223</td>
<td>Expansive Cement (2 hrs)</td>
<td>Penrose</td>
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<td>228</td>
<td>Nondestructive Testing (4 hrs)</td>
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<td>229</td>
<td>Controlled Low-Strength (2 hrs)</td>
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<tr>
<td>315</td>
<td>Detail of Reinforcement (4 hrs)</td>
<td>Colorado D</td>
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<tr>
<td>336</td>
<td>Footings (4 hrs)</td>
<td>Colorado J</td>
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<td>351-2</td>
<td>Fd. for Rotat. &amp; Recip. (4 hrs)</td>
<td>Denver V</td>
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<tr>
<td>367</td>
<td>Precast Chimneys (4 hrs)</td>
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<tr>
<td>437</td>
<td>Strength of Structures (8 hrs)</td>
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<tr>
<td>506</td>
<td>Shotcreting (8 hrs)</td>
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<td>Designing Structures (2 hrs)</td>
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<td>Construction Practices</td>
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<td>*E902-1</td>
<td>Field Tech I</td>
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<td>Silverheels</td>
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<td>*E902-7</td>
<td>Shotcrete Nozzleman</td>
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<td>Scholarships (2 hrs)</td>
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<td>E903</td>
<td>Concrete Craftsman (4 hrs)</td>
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<td>E903</td>
<td>Chairmen Training (2 hrs)</td>
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<td>210</td>
<td>Erosion in Hydraulic Struct. (4 hrs)</td>
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<td>No Slump (2 hrs)</td>
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<td>High Strength (2 hrs)</td>
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<td>Aggregates (2 hrs)</td>
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<td>226-1</td>
<td>Fly Ash (4 hrs)</td>
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<td>Slag (2 hrs)</td>
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<td>Construction of Floors (4 hrs)</td>
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<td>Meas., Mix., Trans/Placing (4 hrs)</td>
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<td>Reinforcement &amp; Develop. (4 hrs)</td>
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* Reconvening Meeting
( ) Total Duration of Meeting
MONDAY

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<td>318-D</td>
<td>Flexure &amp; Axial Loads (4 hrs)</td>
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<td>318-F</td>
<td>Two-Way Slabs (4 hrs)</td>
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<td>351-4</td>
<td>Foundations (6 hrs)</td>
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<td>439</td>
<td>Steel Reinforcement (4 hrs)</td>
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<td>* 506</td>
<td>Shotcreting</td>
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<tr>
<td>523</td>
<td>Insulating &amp; Cellular (2 hrs)</td>
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<tr>
<td>543</td>
<td>Piles (4 hrs)</td>
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4:00 pm - 6:00 pm

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<td>Lab Tech I</td>
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<td>E902-3</td>
<td>Concrete Inspector-General</td>
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<td>E902-4</td>
<td>Concrete Craftsman</td>
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<td>211-D</td>
<td>High Strength (2 hrs)</td>
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<tr>
<td>213</td>
<td>Lightweight Aggregates (2 hrs)</td>
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<tr>
<td>226-1</td>
<td>Fly Ash</td>
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<tr>
<td>226-3</td>
<td>Silica Fume (2 hrs)</td>
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<td>227</td>
<td>Radioactive Waste Management</td>
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<td>* 302</td>
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<tr>
<td>* 304</td>
<td>Measuring, Mixing, Trans/Placing</td>
</tr>
<tr>
<td>* 318-B</td>
<td>Reinforcement &amp; Development</td>
</tr>
<tr>
<td>* 318-C</td>
<td>Serviceability/Safety</td>
</tr>
<tr>
<td>* 318-D</td>
<td>Flexure &amp; Axial Loads</td>
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<td>* 318-F</td>
<td>Two-Way Slabs</td>
</tr>
<tr>
<td>351-4</td>
<td>Foundations</td>
</tr>
<tr>
<td>* 437</td>
<td>Strength of Structures</td>
</tr>
<tr>
<td>* 439</td>
<td>Steel Reinforcement</td>
</tr>
<tr>
<td>* 506</td>
<td>Shotcreting</td>
</tr>
<tr>
<td>* 543</td>
<td>Piles</td>
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<tr>
<td>552</td>
<td>Cement Grouting (2 hrs)</td>
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6:00 pm - 8:00 pm

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>ROOM</th>
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<tbody>
<tr>
<td>122</td>
<td>Energy Conservation (4 hrs)</td>
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6:00 pm - 9:00 pm

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<tbody>
<tr>
<td>J445</td>
<td>Shear &amp; Torsion (3 hrs)</td>
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7:30 pm - 9:30 pm

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<td>Foundations</td>
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<td>548-Sub</td>
<td>Polymer Portland Cement Concrete</td>
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<td>DAY/TIME</td>
<td>FUNCTION</td>
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<td>----------------------------------------------</td>
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<tr>
<td>8:00 pm-10:00 pm</td>
<td>* 122 Energy Conservation</td>
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<td>TUESDAY, March 26, 1985</td>
<td>8:30 am-10:30 am</td>
</tr>
<tr>
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<td>E902 Certification (4 hrs)</td>
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<td></td>
<td>216 Fire Resistance (2 hrs)</td>
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<td>226 Fly Ash, Pozzolan, Slag (4 hrs)</td>
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<tr>
<td></td>
<td>308 Curing (4 hrs)</td>
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<tr>
<td></td>
<td>318-A General Conc. &amp; Const. (4 hrs)</td>
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<tr>
<td></td>
<td>318-E Shear &amp; Torsion (4 hrs)</td>
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<tr>
<td></td>
<td>318-G Prestressed Precast (4 hrs)</td>
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<tr>
<td></td>
<td>318-H Seismic Provisions (4 hrs)</td>
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<tr>
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<td>340 Design Aids (4 hrs)</td>
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<td>350 Sanitary Engineering Struct. (4 hrs)</td>
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<td>351-3 Fd. of Static Equip. (4 hrs)</td>
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<td></td>
<td>355 Anchorage (8 hrs)</td>
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<tr>
<td></td>
<td>408 Bond &amp; Develop. of Reinf. (4 hrs)</td>
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<td>441 Columns (2 hrs)</td>
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<td>531 Concrete Masonry Struct. (4 hrs)</td>
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<td></td>
<td>533 Wall Panels (4 hrs)</td>
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<td></td>
<td>546 Repair (2 hrs)</td>
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<td></td>
<td>J550 Precast Structural (8 hrs)</td>
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<td>553 Swimming Pools (4 hrs)</td>
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<tr>
<td>9:00 am-12:00 pm</td>
<td>• Question &amp; Answer Session</td>
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<tr>
<td></td>
<td>for Contractors</td>
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<tr>
<td></td>
<td>• Computer Design with Micro</td>
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<td>Computers (Part I)</td>
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<td>9:00 am-6:00 pm</td>
<td>• Board of Direction</td>
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<td>10:00 am-5:00 pm</td>
<td>• All Day Film Session</td>
</tr>
<tr>
<td>10:30 am-12:30 pm</td>
<td>* E902 Certification</td>
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<tr>
<td></td>
<td>* 118 Computers</td>
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<td></td>
<td>* 201 Durability (2 hrs)</td>
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<td></td>
<td>* 226 Fly Ash, Pozzolan, Slag</td>
</tr>
<tr>
<td></td>
<td>* 308 Curing</td>
</tr>
<tr>
<td></td>
<td>* 313 Bins &amp; Silos (8 hrs)</td>
</tr>
<tr>
<td></td>
<td>* 318-A General Concrete &amp; Construction</td>
</tr>
<tr>
<td></td>
<td>* 318-E Shear &amp; Torsion</td>
</tr>
<tr>
<td></td>
<td>* 318-G Prestressed Precast</td>
</tr>
<tr>
<td></td>
<td>* 318-H Seismic Provisions</td>
</tr>
<tr>
<td></td>
<td>* 325 Pavements</td>
</tr>
<tr>
<td></td>
<td>* 340 Design Aids</td>
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<td>* 350 Sanitary Engineering Structures</td>
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* Reopening Meeting
( ) Total Duration of Meeting
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<tr>
<td>* 351-3</td>
<td>Fd. of Static Equip.</td>
<td>Denver V</td>
</tr>
<tr>
<td>* 355</td>
<td>Anchorage</td>
<td>Suite 1908</td>
</tr>
<tr>
<td>* 408</td>
<td>Bond &amp; Development of Reinf.</td>
<td>Suite 316</td>
</tr>
<tr>
<td>* 531</td>
<td>Concrete Masonry Structures</td>
<td>Goldcoin</td>
</tr>
<tr>
<td>* 533</td>
<td>Wall Panels</td>
<td>Suite 335</td>
</tr>
<tr>
<td>*J550</td>
<td>Precast Structural</td>
<td>Suite 1930</td>
</tr>
<tr>
<td>* 553</td>
<td>Swimming Pools</td>
<td>Saratoga</td>
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<tr>
<th>2:00 pm- 4:00 pm</th>
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<tbody>
<tr>
<td>Const. Liaison Council (4 hrs)</td>
<td>Penrose</td>
</tr>
<tr>
<td>Educational Activities Committee (4 hrs)</td>
<td>Denver II</td>
</tr>
<tr>
<td>209</td>
<td>Creep &amp; Shrinkage (2 hrs)</td>
</tr>
<tr>
<td>211-A</td>
<td>Edit. &amp; Coordination (2 hrs)</td>
</tr>
<tr>
<td>* 313</td>
<td>Bins &amp; Silos</td>
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<tr>
<td>318</td>
<td>Standard Building Code (Full) (4 hrs)</td>
</tr>
<tr>
<td>349-1</td>
<td>General, Materials, Const. (4 hrs)</td>
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<tr>
<td>349-2</td>
<td>Design (4 hrs)</td>
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<tr>
<td>349-3</td>
<td>Embedded Steel (4 hrs)</td>
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<tr>
<td>349-4</td>
<td>Impulsive &amp; Impactive (4 hrs)</td>
</tr>
<tr>
<td>351</td>
<td>Foundations (Full) (4 hrs)</td>
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<tr>
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<td>Anchorage</td>
</tr>
<tr>
<td>*J550</td>
<td>Masonry Structures (6 hrs)</td>
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<tr>
<td>*J550</td>
<td>Precast Structural</td>
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<td>554</td>
<td>Bearing Systems (4 hrs)</td>
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<table>
<thead>
<tr>
<th>2:00 pm- 5:00 pm</th>
<th>ASSOCIATIONS of</th>
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<tbody>
<tr>
<td>• Conc. Shells Constructed on Air-Supported Forming</td>
<td>Colorado A,B,C,D</td>
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<tr>
<td>• Precast Conc. Buildings: State of the Art</td>
<td>Colorado E</td>
</tr>
<tr>
<td>• Concrete Design with Micro Computers (Part II)</td>
<td>Colorado F</td>
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<tr>
<td>• Open Paper Session</td>
<td>Colorado G,H,I,J</td>
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<table>
<thead>
<tr>
<th>4:00 pm- 6:00 pm</th>
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</thead>
<tbody>
<tr>
<td>* Construction Liaison Council</td>
<td>Penrose</td>
</tr>
<tr>
<td>* Educational Activities Committee (Full)</td>
<td>Denver II</td>
</tr>
<tr>
<td>123</td>
<td>Research (2 hrs)</td>
</tr>
<tr>
<td>222</td>
<td>Corrosion (2 hrs)</td>
</tr>
<tr>
<td>* 313</td>
<td>Bins &amp; Silos</td>
</tr>
<tr>
<td>* 318</td>
<td>Standard Building Code (Full)</td>
</tr>
<tr>
<td>348</td>
<td>Safety (4 hrs)</td>
</tr>
<tr>
<td>* 349-1</td>
<td>General, Materials, Construction</td>
</tr>
<tr>
<td>* 349-2</td>
<td>Design</td>
</tr>
<tr>
<td>* 349-3</td>
<td>Embedded Steel</td>
</tr>
<tr>
<td>* 349-4</td>
<td>Impulsive &amp; Impactive</td>
</tr>
<tr>
<td>* 351</td>
<td>Foundations (Full)</td>
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<td>FUNCTION</td>
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<td>4:00 pm- 6:00 pm (continued)</td>
<td>* 355 Anchorage</td>
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<tr>
<td></td>
<td>* J530 Masonry Structures</td>
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<tr>
<td></td>
<td>* J550 Precast Structural</td>
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<tr>
<td></td>
<td>* 554 Bearing Systems</td>
</tr>
<tr>
<td>6:00 pm- 8:00 pm</td>
<td>* 348 Safety</td>
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<td></td>
<td>* J530 Masonry Structures</td>
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<tr>
<td>6:00 pm-10:00 pm</td>
<td>* 360 Design of Slabs (4 hrs)</td>
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<tr>
<td>7:30 pm- 9:30 pm</td>
<td>* 348 Safety</td>
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<tr>
<td></td>
<td>351-4 Grouting of Equip./Mach.</td>
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<tr>
<td></td>
<td>* 313 Bins &amp; Silos</td>
</tr>
<tr>
<td>8:00 pm-10:00 pm</td>
<td>J334 Shells</td>
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**WEDNESDAY, March 27, 1985**

**8:30 am-10:30 am**

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td></td>
<td>(4 hrs)</td>
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<tr>
<td>224</td>
<td>Cracking</td>
<td>Suite 1908</td>
</tr>
<tr>
<td>307</td>
<td>Chimneys (6 hrs)</td>
<td>Penrose</td>
</tr>
<tr>
<td>318-B</td>
<td>Reinforcement &amp; Develop. (2 hrs)</td>
<td>Denver I</td>
</tr>
<tr>
<td>318-C</td>
<td>Serviceability/Safety (2 hrs)</td>
<td>Denver II</td>
</tr>
<tr>
<td>318-D</td>
<td>Flexure &amp; Axial Loads (2 hrs)</td>
<td>Denver V</td>
</tr>
<tr>
<td>318-F</td>
<td>Two-Way Slabs (2 hrs)</td>
<td>Denver VI</td>
</tr>
<tr>
<td>344</td>
<td>Circular Prestressed Tanks (8 hrs)</td>
<td>Suite 316</td>
</tr>
<tr>
<td>347</td>
<td>Formwork (8 hrs)</td>
<td>Suite 324</td>
</tr>
<tr>
<td>349</td>
<td>Nuclear Structures (4 hrs)</td>
<td>Goldcoin</td>
</tr>
<tr>
<td>435</td>
<td>Deflection (4 hrs)</td>
<td>Suite 335</td>
</tr>
<tr>
<td>504</td>
<td>Joint Sealants (4 hrs)</td>
<td>Suite 1905</td>
</tr>
<tr>
<td>J530</td>
<td>Masonry Structures (10 hrs)</td>
<td>Pomeroy</td>
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**9:00 am-12:00 pm**

- Repair of Prestressed Concrete Structures  Colorado A,B,C,D
- Philosophy of Structural Safety  Colorado E
- Wall Panels - Why Denver is the #1 Precast City  Colorado F
- Precast Bridges (Part I)  Colorado G,H,I,J

**10:00 am-12:00 pm**

- Poster Session  ACI Registration Area
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<tr>
<td></td>
<td>(2 hrs)</td>
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<td></td>
<td>Membership Committee (2 hrs)</td>
<td>Saratoga</td>
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<tr>
<td>211</td>
<td>Proportioning (Full) (2 hrs)</td>
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<tr>
<td>* 224</td>
<td>Cracking</td>
<td>Suite 1908</td>
</tr>
<tr>
<td>* 307</td>
<td>Chimneys</td>
<td>Penrose</td>
</tr>
<tr>
<td>318-A</td>
<td>General Conc. &amp; Const. (2 hrs)</td>
<td>Denver I</td>
</tr>
<tr>
<td>318-E</td>
<td>Shear &amp; Torsion (2 hrs)</td>
<td>Denver II</td>
</tr>
<tr>
<td>318-H</td>
<td>Seismic Provisions (2 hrs)</td>
<td>Denver V</td>
</tr>
<tr>
<td>* 344</td>
<td>Circular Prestressed Tanks</td>
<td>Suite 316</td>
</tr>
<tr>
<td>* 347</td>
<td>Formwork</td>
<td>Suite 324</td>
</tr>
<tr>
<td>* 349</td>
<td>Nuclear Structures</td>
<td>Goldcoin</td>
</tr>
<tr>
<td>* 435</td>
<td>Deflection</td>
<td>Suite 335</td>
</tr>
<tr>
<td>* 504</td>
<td>Joint Sealants</td>
<td>Suite 1905</td>
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<tr>
<td>*J530</td>
<td>Masonry Structures</td>
<td>Pomeroy</td>
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<td>1:00 pm- 5:00 pm</td>
<td>Convention Committee</td>
<td>Denver I</td>
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<td>2:00 pm- 4:00 pm</td>
<td>Specifications Committee (2 hrs)</td>
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<td>Standards Board (2 hrs)</td>
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<tr>
<td>117</td>
<td>Tolerances (4 hrs)</td>
<td>Denver V</td>
</tr>
<tr>
<td>301-Sub</td>
<td>Working Group (4 hrs)</td>
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<tr>
<td>* 307</td>
<td>Chimneys</td>
<td>Penrose</td>
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<tr>
<td>318-G</td>
<td>Prestressed Precast</td>
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<tr>
<td>330</td>
<td>Parking Lots</td>
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<td>* 344</td>
<td>Circular Prestressed Tanks</td>
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<td>Formwork</td>
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<td>363</td>
<td>High Strength (2 hrs)</td>
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<td>Slabs (4 hrs)</td>
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<td>Pomeroy</td>
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<tr>
<td>546-1</td>
<td>Underwater Repair (2 hrs)</td>
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<td>551</td>
<td>Tilt-Up (4 hrs)</td>
<td>Denver IV</td>
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<tr>
<td>2:00 pm- 5:00 pm</td>
<td>* Precast Concrete</td>
<td>Colorado A,B,C,D</td>
</tr>
<tr>
<td></td>
<td>* Adhesive for Concrete</td>
<td>Colorado E</td>
</tr>
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<td></td>
<td>* Research in Progress</td>
<td>Colorado F</td>
</tr>
<tr>
<td></td>
<td>* Precast Bridges (Part II)</td>
<td>Colorado G,H,I,J</td>
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<tr>
<td>4:00 pm- 6:00 pm</td>
<td>E902-5</td>
<td>Goldcoin</td>
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<tr>
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<td>Notation &amp; Nomenclature (2 hrs)</td>
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</tr>
<tr>
<td>* 117</td>
<td>Tolerances</td>
<td>Denver V</td>
</tr>
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* Reconvening Meeting
( ) Total Duration of Meeting
### WEDNESDAY/THURSDAY

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<th>FUNCTION</th>
<th>ROOM</th>
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<tr>
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<tr>
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</tr>
<tr>
<td>* 344</td>
<td>Circular Prestressed Tanks</td>
<td>Suite 316</td>
</tr>
<tr>
<td>345</td>
<td>Bridge Construction (2 hrs)</td>
<td>Suite 304</td>
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<tr>
<td>* 347</td>
<td>Formwork</td>
<td>Suite 324</td>
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<tr>
<td>* 421</td>
<td>Slabs</td>
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<td>* 423</td>
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<tr>
<td>444</td>
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<tr>
<td>517</td>
<td>Accelerated Curing (2 hrs)</td>
<td>Denver III</td>
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<tr>
<td>* 530</td>
<td>Masonry Structures</td>
<td>Pomeroy</td>
</tr>
<tr>
<td>551</td>
<td>Tilt-Up</td>
<td>Denver IV</td>
</tr>
</tbody>
</table>

| 6:00 pm-       | 8:00 pm                            |        |
| * 530          | Masonry Structures                 | Pomeroy |

| 6:30 pm-       | 8:00 pm                            |        |
| *             | Concrete Mixer (reception)         | Colorado Ballroom |

### THURSDAY, March 28, 1985

**8:00 am-10:00 am**
- Awards Breakfast
  - Colorado A-E

<table>
<thead>
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<th>Room</th>
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<td>CCMS</td>
<td>Con. Conc. &amp; Masonry Struct. (4 hrs)</td>
<td>Suite 304</td>
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<tr>
<td>225-1</td>
<td>Math Model Cement Hydration (2 hrs)</td>
<td>Denver VI</td>
</tr>
<tr>
<td>306</td>
<td>Cold Weather Concreting (4 hrs)</td>
<td>Matchless</td>
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<td>359-WG</td>
<td>Concrete Inspectors (4 hrs)</td>
<td>Saratoga</td>
</tr>
<tr>
<td>359-WG</td>
<td>Design (8 hrs)</td>
<td>Goldcoin</td>
</tr>
<tr>
<td>359-WG</td>
<td>Duties &amp; Responsibilities (6 hrs)</td>
<td>Penrose</td>
</tr>
<tr>
<td>359-WG</td>
<td>Reinforcement &amp; Prestressed (4 hrs)</td>
<td>Pomeroy</td>
</tr>
<tr>
<td>359-WG</td>
<td>Concrete (4 hrs)</td>
<td>Suite 1908</td>
</tr>
<tr>
<td>359-WG</td>
<td>Testing &amp; Overpressure (4 hrs)</td>
<td>Suite 316</td>
</tr>
<tr>
<td>J530</td>
<td>Masonry Structures (4 hrs)</td>
<td>Denver II</td>
</tr>
<tr>
<td>544</td>
<td>Bearing Systems (4 hrs)</td>
<td>Denver III</td>
</tr>
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**10:00 am-12:00 pm**
- General Session
  - Colorado F-J

**10:30 am-12:30 pm**
- Reconvener Meeting

( ) Total Duration of Meeting
<table>
<thead>
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<th>DAY/TIME</th>
<th>FUNCTION</th>
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<td>10:30 am - 12:30 pm (continued)</td>
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<tr>
<td>* 359-WG</td>
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<td>* 544</td>
<td>Bearing Systems</td>
<td>Denver III</td>
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<td>2:00 pm - 4:00 pm</td>
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<td>• Forney/ACI Cube Strength Contest</td>
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<td>2:00 pm - 4:00 pm</td>
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<td>Board of Directors (4 hrs)</td>
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<tr>
<td>214</td>
<td>Strength Tests (4 hrs)</td>
<td>Denver I</td>
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<tr>
<td>225-2</td>
<td>Concrete at Early Ages (2 hrs)</td>
<td>Denver VI</td>
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<tr>
<td>301</td>
<td>Structure Specifications (Full) (4 hrs)</td>
<td>Denver II</td>
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<tr>
<td>303</td>
<td>Architectural (4 hrs)</td>
<td>Suite 335</td>
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<tr>
<td>309</td>
<td>Consolidation (4 hrs)</td>
<td>Denver V</td>
</tr>
<tr>
<td>311</td>
<td>Inspection (4 hrs)</td>
<td>Saratoga</td>
</tr>
<tr>
<td>J352</td>
<td>Joints Monolithic (4 hrs)</td>
<td>Suite 1905</td>
</tr>
<tr>
<td>358</td>
<td>Guideways (4 hrs)</td>
<td>Suite 304</td>
</tr>
<tr>
<td>* 359-WG</td>
<td>Design</td>
<td>Goldcoin</td>
</tr>
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<td>Duties &amp; Responsibilities</td>
<td>Penrose</td>
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<td>Materials, Const. &amp; Exam. (4 hrs)</td>
<td>Suite 1908</td>
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<tr>
<td>364</td>
<td>Rehabilitation (4 hrs)</td>
<td>Suite 316</td>
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<td>J442</td>
<td>Lateral Forces (4 hrs)</td>
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<tr>
<td>503</td>
<td>Adhesives (2 hrs)</td>
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<tr>
<td>551</td>
<td>Tilt-Up (4 hrs)</td>
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<td>Precast Fiber Reinforced Concrete</td>
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<td>Non-Chloride Accelerators</td>
<td>Colorado E</td>
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<td></td>
<td>Precast Parking Structures</td>
<td>Colorado F</td>
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<td></td>
<td>4:00 pm - 6:00 pm</td>
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<td>* Board of Direction</td>
<td>Denver IV</td>
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<tr>
<td>Student Activities Program (2 hrs)</td>
<td>Colorado G &amp; H</td>
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<tr>
<td>* 214</td>
<td>Strength Tests</td>
<td>Denver I</td>
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<tr>
<td>215</td>
<td>Fatigue (2 hrs)</td>
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<td>225</td>
<td>Hydraulic Cement (2 hrs)</td>
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<td>305</td>
<td>Hot Weather (2 hrs)</td>
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<tr>
<td>* 301</td>
<td>Structure Specifications (Full)</td>
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* Reconvening Meeting
( ) Total Duration of Meeting
THURSDAY/FRIDAY

DAY/TIME
4:00 pm - 6:00 pm (continued)
* 359-WG Materials, Const. & Exam. Suite 1908
* 364 Rehabilitation Suite 316
* J442 Lateral Forces Suite 324
* 551 Tilt-Up Pomeroy

7:00 pm - 10:00 pm
548 Polymers (3 hrs) Denver I

7:30 pm - 9:30 pm
549 Ferrocement (2 hrs) Matchless

7:30 pm - 10:00 pm
* Forum: The Chloride Issue - The New Limits Colorado E

FRIDAY, March 29, 1985
8:30 am - 10:30 am
121 Metrication Committee (2 hrs) Saratoga
309 Quality Assurance (4 hrs) Denver II
* J359 Consolidation (4 hrs) Denver V
515 Nuclear Vessels (Full) (4 hrs) Denver IV

10:30 am - 12:30 pm
121 Quality Assurance Denver II
309 Consolidation Denver V
* J359 Nuclear Vessels (Full) Denver IV
515 Coatings Matchless

9:00 am - 12:00 pm
* Chloride - Induced Corrosion of Steel in Concrete Colorado A - D
* Use of Computers for Statistical Analysis of Test Data Colorado E
* Inelastic Response of Concrete Structures Colorado F
* Tilt-Up Construction Colorado G - J

10:30 am - 12:30 pm
332 Residential Saratoga

* Reconvening Meeting
( ) Total Duration of Meeting
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THANK YOU
ACI
FUTURE
CONVENTIONS

1985 Fall Convention
September 29-October 4
Palmer House Hotel
Chicago, Illinois

1986 Annual Convention
March 16-21
Hyatt Regency Hotel
San Francisco, California

1986 Fall Convention
November 9-14
Baltimore Omni Hotel
Baltimore, Maryland

Note: The convention preview will be distributed to ACI Members three months prior to each convention. Others may receive a copy by contacting Institute Headquarters.

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Post-Tensioning Institute
Phoenix, Arizona

The Phoenix Corporation
Honolulu, Hawaii
POSTER SESSION

WEDNESDAY, March 27, 1985
10:00 am-12:00 pm

Room: Prefunction Area

POSTER SESSION

Session Chairman: James O. Jirsa
Professor
University of Texas
Austin, Texas

Prestressed Concrete Segmental Bridge Design and Construction Concepts
Gerard A. Sauvageot, Assistant Technical Director, Figg and Muller, Inc., Denver, Colorado; R. Craig Finley, Senior Bridge Engineer, Figg and Muller, Inc., Denver, Colorado

Eisenhower Station — Washington, D.C., Metro
Gerard F. Fox, Partner, Howard Needles Tammen & Bergendorff, New York, New York; Walter Sharko, Associate, Howard Needles Tammen & Bergendorff, Jacksonville, Florida

Shear Fatigue Behavior of Prestressed Concrete Girders
Michael E. Kreger, Assistant Professor, University of Texas, Austin, Texas; Patrick M. Bachman, Engineer, Porter-Donaghue Associates, Austin, Texas

Dynamic Loading of Highway Bridges
Roger E. Green, Professor, University of Waterloo, Waterloo, Canada; John R. Billing, Ministry of Transportation and Communications, Ontario, Canada

Influence of Axial Force Reversals on Flexural Behavior of Concrete Columns
Daniel P. Abrams, Naval Civil Engineering Laboratory, Port Hueneme, California; William Epp, Structural Engineer, Sargent and Lundy, Chicago, Illinois

Glass Fiber Reinforced Concrete for Architectural Cladding
Les Kemper, Manager, Glass Fiber Reinforced Concrete Architectural Products, Stanley Structures, Denver, Colorado; Bart Baker, Sales Representative, Glass Fiber Reinforced Concrete Architectural Products, Stanley Structures, Denver, Colorado

Special Applications of Silica Fume Concrete
John Wolsiefer, National Management Service, Hauppauge, New York

Sulfur Concrete — Engineering Applications in an Acid Environment
Scott S. Pickard, Vice President, Sulcon, Inc., Champaign, Illinois; Marvin W. Morgan, Construction Superintendent, Sulcon, Inc., Champaign, Illinois

Flexible Design and Production Methods Applied to Precast Concrete
A. Murray Lount, CAD, Inc., Vancouver, BC, Canada

Interactive Computer Graphics Analysis — Design of Reinforced Concrete Buildings
Victor E. Saouma, Professor, University of Colorado, Boulder, Colorado; Efthimios S. Sikiotis, Graduate Research Assistant, University of Colorado, Boulder, Colorado
STUDENT ACTIVITIES PROGRAM

THURSDAY, March 28, 1985
2:00 pm - 6:00 pm

STUDENT PROGRAM
Sponsored by ACI Committee E-801

Session Chairman: R. John Craig
Associate Professor
Department of Civil and Environmental Engineering
New Jersey Institute of Technology
Newark, New Jersey

Session Moderator: Luke M. Snell
Associate Professor of Construction
Southern Illinois University
Edwardsville, Illinois

This program has three main goals:
1. Create student interest and familiarity with ACI
2. Stimulate some interest in working concrete projects at both the undergraduate and graduate levels
3. Show students some of the existing careers in concrete construction and design

The program is geared for the following:
1. Students — undergraduate and graduate
2. General members of ACI
3. Those interested in Committee E-801 activities

PROGRAM

Room: ACI Registration Area

2:00 pm  Forney/ACI Cube Strength Contest
4:00 pm  Student Concrete Projects
          Careers Related to Concrete Construction and Design
          Presentation of Papers by Students
          Social Hour
At the ACI convention registration desk you may place an order or purchase the following accessories:

<table>
<thead>
<tr>
<th>Product</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACI Fellow Pin/Tie Tac</td>
<td>$9.95</td>
</tr>
<tr>
<td>Our ACI emblem and Fellow designation in 10k gold</td>
<td></td>
</tr>
<tr>
<td>ACI Member Pin</td>
<td>$9.50</td>
</tr>
<tr>
<td>Phodium, enameled in ACI blue</td>
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</tr>
<tr>
<td>Necktie</td>
<td>$6.50</td>
</tr>
<tr>
<td>Dark blue, embroidered with ACI logo</td>
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<tr>
<td>Golf Hat</td>
<td>$5.95</td>
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<tr>
<td>Dark blue with ACI logo</td>
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<tr>
<td>Money Clip</td>
<td>$5.25</td>
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<tr>
<td>Antique silver tone, in gift box</td>
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</tr>
<tr>
<td>ACI Key Tags</td>
<td>$3.95</td>
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<tr>
<td>Two styles-available in all-chain or ring mesh, both have pewter finish</td>
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Reminder

Awards Breakfast
Thursday
Cost: $10.00
Purchase tickets by Wednesday, March 27, 1985.
Personal Log
1985 Annual Convention

Delegate's Name

Sunday, March 24, 1985
8:00 a.m. —
1:00 p.m. —

1:00 p.m. —
5:00 p.m. Registration Hours

5:30 p.m. —
7:00 p.m.

Monday, March 25, 1985
7:00 a.m. —
8:30 a.m.

8:30 a.m. —
10:30 a.m.

10:30 a.m. —
12:30 p.m.

12:30 p.m. —
2:00 p.m. Lunch Break

2:00 p.m. —
4:00 p.m.

4:00 p.m. —
6:00 p.m.

6:00 p.m. —
7:30 p.m.

7:30 p.m. —
9:30 p.m.
Tuesday, March 26, 1985

7:00 a.m. —
8:30 a.m. —

8:30 a.m. —
10:30 a.m. —

9:00 a.m. — Sessions:
12:00 p.m. Question & Answer Session/Contractors Colorado E

Concrete Design w/Micro Computers (I) Colorado F

10:00 a.m. —
5:00 p.m. All Day Film Session Denver I

10:30 a.m. —
12:30 p.m. —

12:30 p.m. —
2:00 p.m. Lunch Break

2:00 p.m. —
4:00 p.m. —

2:00 p.m. — Sessions:
5:00 p.m. Concrete Shells Const. on Air-Supported Forming Colorado A, B, C, D

Precast Concrete Buildings: State of the Art Colorado E

Concrete Design w/Micro Computers (II) Colorado F

Open Paper Session Colorado G, H, I, J

4:00 p.m. —
6:00 p.m. —

6:00 p.m. —
7:30 p.m. —

7:30 p.m. —
9:30 p.m. —

Wednesday, March 27, 1985

7:00 a.m. —
8:30 a.m. —

8:30 a.m. —
10:30 a.m. —

32
### Wednesday, March 27, 1985 (continued)

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<thead>
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<tr>
<td>9:00 a.m.</td>
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<tr>
<td>12:00 p.m.</td>
<td>Repair of Prestressed Concrete Structures</td>
<td>Colorado A,B,C,D</td>
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<td>Philosophy of Structural Safety</td>
<td>Colorado E</td>
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<td>Wall Panels - Why Denver Is The #1 Precast City</td>
<td>Colorado F</td>
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<td>Precast Bridges (I)</td>
<td>Colorado G,H,I,J</td>
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<td>Lunch Break</td>
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<td>2:00 p.m.</td>
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<td>Precast Concrete</td>
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<td><strong>Thursday, March 28, 1985</strong></td>
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<td>Awards Breakfast</td>
<td>Colorado A,B,C,D,E</td>
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<td>GENERAL SESSION</td>
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<td>12:30 p.m.</td>
<td>Lunch Break</td>
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<td>2:00 p.m.</td>
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<td>Precast Fiber Reinforced Concrete</td>
<td>Colorado A,B,C,D</td>
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<td>Non-Chloride Accelerators</td>
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<td>Precast Parking Structures</td>
<td>Colorado F</td>
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<td>4:00 p.m.</td>
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<td>6:00 p.m.</td>
<td>Student Activities Program</td>
<td>Colorado G,H</td>
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<td>10:00 p.m. Forum: The Chloride Issue - The New Limits</td>
<td>Colorado E</td>
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### Friday, March 29, 1985

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<thead>
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<td>9:00 a.m.</td>
<td>Sessions:</td>
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<td>12:00 p.m.</td>
<td>Chloride-Induced Corrosion of Steel in Concrete</td>
<td>Colorado A,B,C,D</td>
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<td>Use of Computers for Statistical Analysis of Test Data</td>
<td>Colorado E</td>
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<td>Inelastic Response of Concrete Structures</td>
<td>Colorado F</td>
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<td>Till-Up Construction</td>
<td>Colorado G,H,I,J</td>
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<td>12:30 p.m.</td>
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TECHNICAL SESSIONS

TUESDAY, March 26, 1985
9:00 am-12:00 pm

Room: Colorado E

QUESTION AND ANSWER SESSION
FOR CONTRACTORS
Sponsored by TAC ad hoc Committee

Session Chairman: Joseph A. Dobrowolski
Concrete Consultant
Altadena, California

Panelists:
James L. Cope
Chairman, Committee 304
Morgen Manufacturing Co.
Yankton, South Dakota

Charles M. Dabney
Chairman, Committee 303
Charles M. Dabney Associates
Newport Beach, California

Edwin Decker
Chairman, Committee 212
Gifford-Hill & Co.
Dallas, Texas

Allan R. Kenney
Chairman, Committee 533
Precast Systems Consulting Inc.
Frisco, Texas

Donald W. Musser
Chairman, Committee 551
Portland Cement Associate
Skokie, Illinois

Guy S. Puccio
Chairman, Committee 504
Acme Highway Products
Amherst, New York

Donald L. Schlegel
Chairman, Committee 309
Price Brothers Co.
Dayton, Ohio

Dean Stephan
Chairman, Committee 117
Charles Pankow Inc.
Altadena, California
TUESDAY, March 26, 1985
9:00 am-12:00 pm
Room: Colorado F

CONCRETE DESIGN WITH MICRO COMPUTERS (PART I)
Sponsored by Committee E702

Session Chairman: Kenneth H. Murray
Principal Engineer
Gilbert Associates, Inc.
Reading, Pennsylvania

Development of Strand Pattern Details to Meet Flexural Requirements for Building Members

The Equivalent Frame Analysis Method Adapted to Apple Ile
Michael A. Cassaro, Professor, University of Louisville, Louisville, Kentucky; Ali Al-Sewaad, I, Student, University of Louisville, Louisville, Kentucky; Joseph Cattan, Student, University of Louisville, Louisville, Kentucky

Design of Concrete Sections Subject to Shear and Torsion
Stephen Ho, Guinnin-Campbell, Dallas, Texas

Shear Analysis for Two-way Slab at Interior Rectangular Column
David G. Kittridge, Boyle Engineering Corporation, Orlando, Florida

Selection and Design of PCI Standard Double Tee Sections
Fouad H. Fouad, Assistant Professor, University of Alabama, Birmingham, Alabama; Judith H. Price, Engineer, Rust International Corporation, Birmingham, Alabama

Biaxial Bending of Reinforced Concrete Columns
Mohammad R. Ehsani, Assistant Professor, University of Arizona, Tucson, Arizona; David B. Rosenbaum, Graduate Student, University of Arizona, Tucson, Arizona

Design of R/C Slabs on the IBM PC
M. Daniel Vanderbilt, President, Engineering Design Software Co., Ft. Collins, Colorado

"Concrete Design With Micro Computers" $24.00
This material may be purchased at the registration desk.
TECHNICAL SESSION

TUESDAY, March 26, 1985
2:00 pm - 5:00 pm
Room: Colorado G,H,I,J

OPEN PAPER SESSION
Sponsored by TAC ad hoc Committee

Session Chairman: David Darwin
University of Kansas
Lawrence, Kansas

Sulfur Concrete's Major Applications
Scott S. Pickard, Vice President, General Manager, Sulcon, Inc.,
Champaign, Illinois

Design of Concrete Inverted T-Beams
S. A. Mirza, Professor of Civil Engineering, Lakehead University,
Thunder Bay, Ontario, Canada; R. W. Furlong, Professor of Civil
Engineering, University of Texas, Austin, Texas

Effect of Slab on the Behavior of Exterior Connections
Ahmad J. Durrani, Assistant Professor, Rice University, Houston,
Texas

Truss Models for Reinforced and Prestressed Concrete Under Shear
and Torsion
Julio A. Ramirez, Assistant Professor of Structural Engineering, Purdue
University, West Lafayette, Indiana; John E. Breen, Carol Cockrell
Curran Chair in Engineering, University of Texas, Austin, Texas

Dynamic Response of R/C Frames with Irregular Vertical Configura-
tions
Sharon L. Wood, Research Assistant, University of Illinois, Urbana,
Illinois

Effect of Steel Fibers on the Rotation Capacity of R/C Continuous
Beams
M. Nadim Hassoun, Professor, South Dakota State University, Brook-
ings, South Dakota; Khani Sahebjam, Teaching Assistant, South
Dakota University; Brookings, South Dakota

Fiberglass Reinforced Concrete for Precast Products
Shyam N. Shukla, Project Manager, Lawrence Livermore National
Laboratory, Livermore, California; James M. Leaver, General Con-
tractor, Lafayette, California
TUESDAY, March 26, 1985
2:00 pm - 5:00 pm
Room: Colorado A, B, C, D

CONCRETE SHELLS CONSTRUCTED
ON AIR-SUPPORTED FORMING
Sponsored by Committee 334

Session Chairman: Robert B. Haber
Professor
University of Illinois
Urbana, Illinois

Concrete Shells Constructed on Air-Supported Forming: An Overview
Jonathon Zimmerman, McCartney Engineering Consultants, Longmont, Colorado

The Shape of Things to Come: Aesthetics of Balloon-Formed Shell Structures
Lloyd Turner, Boulder Creek, California

Stratiform Shells
William Milburn, Jr., Milburn Research, Boulder, Colorado

Applications of the Air-Form Thin Shell Theory
Jack Brunk, Porter Grain, Rensselaer, Indiana

Challenges in the Design and Construction of Concrete Shells on Air-Supported Forming
Arnold Wilson, Professor, Brigham Young University, Provo, Utah

The DYK Igloo and Automated Shell Construction Techniques
M. J. Dykmans, Principal, Dyk-Tech, El Cajon, California

Binishells: Inflated Reinforced Concrete Dome Structures
Dante Bini, President, Binistar, Inc., San Francisco, California

Construction of Air-Formed Concrete Structures
George Paul, Tecton Corporation, Colorado Springs, Colorado; Mert Hull, Tecton Corporation, Colorado Springs, Colorado
TECHNICAL SESSION

TUESDAY, March 26, 1985
2:00 pm– 5:00 pm
Room: Colorado F

CONCRETE DESIGN WITH MICRO COMPUTERS (PART II)
Sponsored by Committee E702

Session Chairman: Kenneth H. Murray
Principal Engineer
Gilbert Associates, Inc.
Reading, Pennsylvania

Determining Adequate Curing for Concrete Members
Luke M. Snell, Consultant/Program Director, Southern Illinois University, Edwardsville, Illinois; Robert Rutledge, Professor, Southern Illinois University, Edwardsville, Illinois; Norval Wallace, Acting Dean, Southern Illinois University, Edwardsville, Illinois

Reinforced Fibrous Concrete Computer Programs for Design
R. John Craig, Associate Professor, New Jersey Institute of Technology, Newark, New Jersey; A. Sjamsu, Z. Patel, K. Patel, D. Patel, R. Patel, Graduate Students, New Jersey Institute of Technology, Newark, New Jersey

RCCR-Wall: Reinforced Concrete Cantilever Retaining Wall
M. Asghar Bhatti, Assistant Professor, University of Iowa, Iowa City, Iowa; M. E. Nagib, P. Breckner, L. Farsakh, Graduate Students, University of Iowa, Iowa City, Iowa

Computer Aided Analysis and Design of R/C Structural Members
Musa R. Resheidat, Assistant Professor, Yarmouk University, Irbid, Jordan

Frank J. Vecchio, Research Engineer, Ontario Hydro, Toronto, Canada

An Interactive Microcomputer Aided Design of Ferrocement Storage Tanks
K. Shashi Kumar, International Ferrocement Information Center, Bangkok, Thailand; Lin Jan-Shone; R. P. Rama

Microcomputer Generated Design Aids for RC Design
Grant T. Halvorsen, West Virginia University, Morgantown, West Virginia
TUESDAY, March 26, 1985
2:00 pm - 5:00 pm
Room: Colorado E

PRECAST CONCRETE BUILDINGS: THE STATE OF THE ART
Sponsored by the Rocky Mountain Chapter

Session Cochairmen: Paul Mack
Rocky Mountain Prestress
Denver, Colorado

Jerry Jacques
Stanley Structures
Denver, Colorado

Fire Truck Loads - 250 psi - Too Much or Too Little?
Walter J. Prebis, Executive Director, Colorado Prestressers Association, Lakewood, Colorado

New Frontiers in Prestressed Concrete Bridges
Alex Aswad, Staff Consultant, Stanley Structures, Inc., Denver, Colorado

Beaver Creek Garage - The Hidden Atlas
Albert E. Anderson, President, Anderson & Hastings Consulting Engineers, Inc., Denver, Colorado

Innovations in the Guarantee Bank Building
Roger H. Kaness, Principal, S. A. Miro, Inc., Denver, Colorado

Unique Applications for Precast Concrete
Donald L. Berry, Vice President, Richard Weingardt Consultants, Inc., Denver, Colorado
WEDNESDAY, March 27, 1985
9:00 am-12:00 pm Room: Colorado A,B,C,D

REPAIR OF PRESTRESSED CONCRETE STRUCTURES
Sponsored by Committees 423 & 546

Session Chairman: Daniel P. Jenny
Prestressed Concrete Institute
Chicago, Illinois

Repair of Bond Court Hotel, Cleveland, Ohio
Gregory P. Chacos, President, Chacos & Associates, Inc., Cleveland, Ohio

Deterioration Repairs to Prestressed Parking Ramp Deck Members
John D. Reins, Senior Engineer, Wiss, Janney, Elstner Associates, Littleton, Colorado; Donald F. Meinheit, Consultant, Wiss, Janney, Elstner Associates, Northbrook, Illinois

Repair of Monostrand Tendons
Morris Schupack, President, Schupack Suarez Engineers, Inc., South Norwalk, Connecticut; Mario G. Suarez, Vice President, Schupack Suarez Engineers, Inc., South Norwalk, Connecticut

Cathodic Protection of Prestressed Concrete Structures
Gee Kin Chou, Marketing Manager, AnodeFlex Cathodic Protection Systems, Menlo Park, California

Repair of a Precast Parking Structure
Robert G. Tracy, President, Tracy Materials Consultants, Kalamazoo, Michigan

Performance of Sliding Bearing Connections in Prestressed Concrete Construction

Discussion
WEDNESDAY, March 27, 1985
9:00 am-12:00 pm

TECHNICAL SESSION

Room: Colorado E

PHILOSOPHY OF STRUCTURAL SAFETY
Sponsored by Committee 348

Session Chairman: Robert G. Sexsmith
Buckland & Taylor, Ltd.
West Vancouver, B.C., Canada

Intelligent Use of Sensitivity Studies in Structural Safety Problems
Dan Frangopol, Associate Professor, University of Colorado, Boulder, Colorado

The Ethics of Structural Safety
Luis Esteva, Ciudad University, Mexico City, Mexico; Emilio Rosenthal, Ciudad University, Mexico City, Mexico

Choice of Code Design Formats
Carl Turkstra, Professor, Polytechnic Institute of New York, Brooklyn, New York

Safety of Members in Structural Systems
Andrzej Novak, Associate Professor, University of Michigan, Ann Arbor, Michigan
TECHNICAL SESSION

WEDNESDAY, March 27, 1985
9:00 am-12:00 pm
Room: Colorado F

WALL PANELS - WHY DENVER IS THE #1 PRECAST CITY
Sponsored by Committee 533

Session Chairman: Muriel Burns
Vice President
Preco Industries, Ltd.
Plainview, New York

Introduction
Muriel Burns, Vice President, Preco Industries, Ltd., Plainview, New York

Evolution of Architectural & Structural Precast In Denver
William C. Richardson, Jr., Vice President, Stresscon Corp., Colorado Springs, Colorado

Total Systems, The Competitive Edge
Ronald R. Fossett, Vice President, Rocky Mountain Prestress, Inc., Englewood, Colorado

From the Contractor's Point of View
Jim Simmons, Manager, Al Cohen Construction Company, Denver, Colorado

From the Architect's Point of View
Jim Bradburn, Partner, C. W. Fentress, Architects, Denver, Colorado

From the Engineer's Point of View
O'Dell Johnson, Partner, KKBNA Engineering, Wheatridge, Colorado

From the Precaster's Point of View
Robert M. Reed, Sales Manager, Stanley Structures, Denver, Colorado
WEDNESDAY, March 27, 1985
9:00 am-12:00 pm

PRECAST BRIDGES
(PART I)
Sponsored by Committee 343

Session Chairman: Harold R. Sandberg
Alfred Benesch & Company
Chicago, Illinois

A New Approach to Highway Bridges: Curved, Precast Prestressed
Concrete Box Girders
Mario G. Suarez, Vice President, Schupack Suarez Engineers, Inc.,
Norwalk, Connecticut; Gordon Nagle, President, Schuylkill Products,
Inc., Cressona, Pennsylvania

Segmental Concrete Bridge Construction
Allan C. Harwood, Region Operations Engineer, Oregon Department
of Transportation, Milwaukie, Oregon

Testing of Match-Cast Segmental Girders
Khosrow Sowlat, Structural Engineer, Construction Technology Lab-
oratories, Skokie, Illinois; Basile G. Rabbat, Manager, Portland Cement
Association, Skokie, Illinois; James M. Barker, Assistant Vice Presi-
dent, Figg and Muller Engineers, Inc., Tallahassee, Florida

Fatigue Reliability of Prestressed Concrete Girder Bridges
Rajeh Zaid Al-Zaid, PhD Candidate, University of Michigan, Ann
Arbor, Michigan; Andrzej S. Nowak, Assistant Professor, University of
Michigan, Ann Arbor, Michigan

Thermal Stresses and Deformations of Concrete Bridges
Amin Ghali, Professor, University of Calgary, Calgary, Alberta, Canada;
Mamdouh Elbadry, PhD Candidate, University of Calgary, Calgary,
Alberta, Canada

Cracking of Precast, Post-tensioned Floorbeam Due to Improper
Grouting of the Duct
Vikas P. Wagh, Senior Designer, Michael Baker Jr., Inc., Beaver,
Pennsylvania
WEDNESDAY, March 27, 1985  
2:00 pm - 5:00 pm  
Room: Colorado A,B,C,D

PRECAST CONCRETE  
Sponsored by Committee 550

Session Chairman: Harold J. Jobse  
Director of Engineering Services  
Concrete Technology Corporation  
Tacoma, Washington

Status of Revision Chapter 16, ACI 318  
Harold J. Jobse, Director of Engineering Services, Concrete Technology Corporation, Tacoma, Washington

Distribution of Vertical Load in Precast Concrete Floors  
John F. Stanton, Professor, University of Washington, Seattle, Washington

Load Bearing Hollow Core Wall Panels  

Adapting Revised Chapter 16 to a Precast Project  
Johan Oye, Manager, Precast Systems Sales, Concrete Technology Corporation, Tacoma, Washington
WEDNESDAY, March 27, 1985  
2:00 pm - 5:00 pm  
Room: Colorado E

ADHESIVES FOR CONCRETE  
Sponsored by Committee 503

Session Chairman: Jack J. Fontana  
Brookhaven National Lab  
Upton, New York

Structural Adhesives, Their Properties, Advantages and Limitations  
Peter Mendis, Vice President, Dural International, Deer Park, New York

Behavior of Epoxy Repaired Beams Under Elevated Temperatures and Fire  
Joseph M. Plecnik, Associate Professor, North Carolina State University, Raleigh, North Carolina; John H. Fogarty, Research Assistant, North Carolina State University, Raleigh, North Carolina; John Kurfees, Research Assistant, North Carolina State University, Raleigh, North Carolina

Epoxy Bonding Agents for Precast Segmental Concrete Bridges  
James M. Barker, Assistant Vice President, Figg & Muller Engineering, Inc., Tallahassee, Florida; Jean M. Muller

Epoxy Bonding of Concrete in Kansas  
F. Wayne Stratton, Research Engineer, Kansas Department of Transportation, Topeka, Kansas; Carl F. Crumpton

Epoxy Adhesive Injection - a 25 Year History  
Robert W. Gaul, President, Adhesives Engineering Company, San Carlos, California; Herb Grubb, Manager - Field Service, Adhesives Engineering Co., San Carlos, California

Epoxy - Hydraulic Pile Splice  
Frank Constantino, Vice President/Sales, Dural International Corporation, Deer Park, New York
WEDNESDAY, March 27, 1985
2:00 pm - 5:00 pm
Room: Colorado G,H,I,J

PRECAST BRIDGES
(PART II)
Sponsored by Committee 343

Session Chairman: Harold R. Sandberg
Alfred Benesch & Company
Chicago, Illinois

Site Precast Construction of Short-Span Concrete Bridges
Theodore L. Neff, Transportation Engineer, Concrete Reinforcing Steel Institute, Schaumburg, Illinois

Designing and Detailing for Minimum Maintenance in a Corrosive Environment - Lake Ponchartrain Railroad Trestle

Constructing a Precast Box Girder Railroad Bridge Under Traffic - Lake Ponchartrain Railroad Trestle
John Allen, Assistant to Chief Engineer - Bridges, Southern Railway System, Atlanta, Georgia; R. A. Tallent, Process Engineer Structures, Southern Railway System, Atlanta, Georgia

Precast I-beams Carry Super-heavy Loads
Robert J. McFarlin, Director of Transportation Division, Bakke, Kopp, Ballou & McFarlin, Inc., Minneapolis, Minnesota

Design & Construction of Post-Tensioned Concrete Bridge Over an Arizona Wash

Precast Concrete Trusses
Marius B. Wechsler, Senior Engineer, Bechtel Power Corporation, Norwalk, California
WEDNESDAY, March 27, 1985
2:00 pm - 5:00 pm

RESEARCH IN PROGRESS
Sponsored by Committee 123

Session Chairman: Charles F. Scholer
Purdue University
West Lafayette, Indiana

Failure of Reinforced Concrete Beams at Early Ages
Surendra P. Shah, Professor of Civil Engineering, Northwestern University,
Evanston, Illinois; Richard A. Miller, Research Assistant, Northwestern University,
Evanston, Illinois

Partially Prestressed Beams Under Cyclic Loading
Antoine E. Naaman, Professor, University of Michigan, Ann Arbor, Michigan;
M. H. Harajli, Research Assistant, University of Michigan, Ann Arbor, Michigan

Compaction Concrete Utilizing Phosphogypsum
Antonio Nanni, PhD Candidate, University of Miami, Coral Gables, Florida;
Wen F. Chang, Professor, University of Miami, Coral Gables, Florida; K. T. Lin, PhD Candidate, University of Miami, Coral Gables, Florida

Confinement Effectiveness of Crosssties in R/C Compression Members
Jack Moehle, Assistant Professor, University of California, Berkeley, California

Application of Neutron Radiography to the Study of Concrete
Walid S. Najjar, Graduate Research Assistant, Cornell University, Ithaca, New York; Kenneth C. Hover, Associate Professor, Cornell University, Ithaca, New York; Howard C. Aderhold, Supervisor, Ward Nuclear Lab, Cornell University, Ithaca, New York

Investigation of Tiltup Simplified Design

Maturity-Optimization of the Datum Temperature
Thomas J. Parsons, Assistant Professor of Civil Engineering, Arkansas State University, State University, Arkansas

Confined Concrete Columns
Shamin A. Sheik, Assistant Professor, University of Houston, Houston, Texas; S. T. Mau, Visiting Professor, University of Houston, Houston, Texas; David Menzies, Graduate Student, University of Houston, Houston, Texas

Effect of Repeated Relemping on Properties of Fresh and Hardened Concrete Mixed at Higher Ambient Temperatures
M. A. Samarai, Director General, National Centre for Construction Lab., Baghdad, Iraq; V. Ramakrishnan, Professor, South Dakota School of Mines & Technology, Rapid City, South Dakota; V. M. Malhotra, Head, Construction Materials Section, Department of Energy, Mines and Resources, Ottawa, Canada

Ultrasonic Measurement of Microcracking in Uniaxial Compression of Concrete
Wimal Suaris, Professor, University of Miami, Coral Gables, Florida
AWARDS BREAKFAST

THURSDAY, March 28, 1985
8:00 am-10:00 am
Room: Colorado A,B,C,D,E

AWARDS BREAKFAST
Cost: $10.00
Come meet the awardees. Have fun, enjoy a good breakfast, and watch the multi-media awards presentations.

AWARDS
Honorary Membership
Paul Klieger
Shu-Tien Li
Katharine Mather
Alfred L. Parme

Arthur R. Anderson Award
William L. Dolch

Joe W. Kelly Award
Paul Zia

Henry C. Turner Medal
Material Service Corporation

Alfred E. Lindau Award
John A. Martin

Henry L. Kennedy Award
Loring A. Wyllie, Jr.

Construction Practice Award
Cameron Kemp
Gerry Weiler

Roger H. Corbetta Concrete Constructor Award
Richard E. Kasler

Wason Medal for the Most Meritorious Paper
Robert B. Johnson

Wason Medal for Materials Research
George C. Hoff
Alan D. Buck

Chapter Activities Award
Kenneth D. Cummins

Delmar L. Bloem Awards for Distinguished Service
Ralph L. Duncan
David W. Fowler
Timothy J. Fowler
Mete A. Sozen

Raymond C. Reese Structural Research Award
Frank J. Heger
Mehdi S. Zarghamie

Arthur J. Boase Award
(a presentation of the Reinforced Concrete Research Council)
James G. MacGregor
THURSDAY, March 28, 1985
10:00 am-12:00 pm
Room: Colorado F,G,H,I,J

GENERAL SESSION

Session Chairman: Robert T. Bates
President
Rocky Mountain Chapter ACI
Meurer & Associates
Lakewood, Colorado

Welcome to Denver
Robert T. Bates, Meurer & Associates, Lakewood, Colorado

Presidential Address
Ignacio Martin, Partner, Capacete, Martin & Associates, San Juan, Puerto Rico

Certificates of Appreciation for the 1985 Annual Convention

Introduction of Foreign Visitors

Petitions for New Chapters

Recognition of Chapters Present

Recognition of Retiring Officers

Recognition of Past Presidents Present

Tellers Report

Presentation of Momento to Retiring President

Keynote Speaker
Leonard M. Perlmutter, Chairman of the Board, Stanley Structures, Denver, Colorado
THURSDAY, March 28, 1985  
2:00 pm - 5:00 pm  
Room: Colorado A,B,C,D

**PRECAST FIBER REINFORCED CONCRETE**  
Sponsored by Committee 544

**Symposium Chairman:**  
George C. Hoff  
Mobile Research & Development Corp.  
Dallas, Texas

**Session Moderator:**  
Ben L. Tilsen  
Plant Manager  
Concast, Inc.  
Rosemount, Minnesota

**High Tenacity Polypropylene Concrete**  
Surendra P. Shah, Professor, Northwestern University, Evanston, Illinois; Herbert Krenchel, Assistant Professor, Technical University of Denmark, Lyngby, Denmark

**GFRC Use in Electrical Transmission and Distribution, Control and Communication**  
Art N. Ojala, President, Concast, Inc., Rosemount, Minnesota; Ben L. Tilsen, Research and Development, Concast, Inc., Rosemount, Minnesota

**Development of Non-Returnable Steel Fiber Reinforced Concrete Cable Reels**  
Morris Schupack, President, Schupack Suarez Engineers, Inc., South Norwalk, Connecticut

**Fiber-Reinforced Cement Products Using Organic Fibers Derived From Industrial Wastes**  
Craig O. Thomas, Civil Engineering Student, Cornell University, Ithaca, New York; Kenneth C. Hover, Associate Professor, Cornell University, Ithaca, New York

**Architectural Applications of GFRC**  
Ralph C. Robinson, President, Olympian Stone Company, Redmond, Washington

**Applications of Slurry-Infiltrated Fiber Concrete (SIFCON) in Precast Products**  
Bruce Schneider, Senior Research Engineer, New Mexico Engineering Research Institute, Albuquerque, New Mexico
THURSDAY, March 28, 1985
2:00 pm- 5:00 pm
Room: Colorado E

NON-CHLORIDE ACCELERATORS
Sponsored by Committee 212

Session Chairman: William J. Perenchio
Wiss, Janney, Elstner & Associates
Northbrook, Illinois

A Calcium Nitrite-Based, Non-Corrosive, Non-Chloride Accelerator
David Chin, Senior Research Associate, W. R. Grace & Co., Cambridge, Massachusetts

A New Generation of Liquid Setting Accelerators for Guniting
H. Hass, Chemist, Dynamit Nobel, Troisdorf, West Germany

Effects of Non-Chloride Accelerators on the Physical Properties of Portland Cement/Slag Concrete
Fred Kinney, Manager Materials Research, Master Builders, Cleveland, Ohio

Comparison of the Corrosion Potentials of Calcium Chloride and a Calcium Nitrate Based Non-Chloride Accelerator
Jens Holm, Project Engineer, Wiss, Janney, Elstner & Associates, Northbrook, Illinois

Strength-Increasing Effects of a Chloride-Free Accelerator
Sandor Popovics, Professor, Drexel University, Philadelphia, Pennsylvania

The Effects of Non-Chloride Accelerating Admixtures on the Setting Characteristics of Portland Cement Concrete
Philip A. Smith, Chief Engineer, Gifford-Hill & Co., Charlotte, North Carolina

Comparison of Various Types of Non-Corrosive and Inhibited Accelerators for Concrete
Valery Tokar, Vice President, Euclid Chemical, Cleveland, Ohio
THURSDAY, March 28, 1985
2:00 pm - 5:00 pm
Room: Colorado F

PRECAST PARKING STRUCTURES
Sponsored by Committee 362

Session Chairman:  Carl A. Peterson
                   Wiss, Janney, Elstner & Associates
                   Northbrook, Illinois

Precast - A Designer's View
Howard R. May, President, Conrad Associates East, Chicago, Illinois

Precast - A Precast Producer's View
Mario J. Bertolini, President, Blankeslee Prestress, Inc., Branford, Connecticut

Precast - a General Contractor's View
Dean E. Stephan, Jr., Charles Pankow Inc., Altadena, California

Common Design and Construction Problems
Charles H. Raths, President, Raths, Raths & Johnson, Inc., Willowbrook, Illinois

Study of Performance of Precast Parking Structures
FORUM: THE CHLORIDE ISSUE - THE NEW LIMITS
Sponsored by Committee 123

Forum Chairman: Robert L. Henry
Wiss, Janney, Elstner & Associates
Arlington, Texas

Moderator: Arthur L. Walitt
W. R. Grace & Co.
Cambridge, Massachusetts

Panelists: John M. Albinger
Manager, Quality Control
Materials Service Corp.
Chicago, Illinois

Kenneth C. Clear
President
Kenneth C. Clear, Inc.
Sterling, Virginia

Ted Webster
President
Webster Engineering Association, Inc.
Cleveland, Ohio

As the chloride content permitted in concrete is restricted in applications susceptible to corrosion, a new set of problems are presented to engineers, concrete producers, contractors and test labs. Questions on chlorides in aggregates, differences in test procedures, non-chloride versus non-corrosive admixtures and liability need to be answered with solid technical evidence. A panel of industry experts will discuss the problems, the existing technology and the research that is needed to support guidelines for the construction industry. This open discussion forum should provide an opportunity to tie together field problems and the technology that will be presented at Thursday’s session on Non-Chloride Accelerators sponsored by ACI Committee 212 and Friday’s session on Chloride-Induced Corrosion of Steel in Concrete sponsored by ACI Committees 201 and 222.
CHLORIDE-INDUCED CORROSION OF STEEL IN CONCRETE
Sponsored by Committees 201 and 222

Session Chairman: Bernard Erlin
Erlin, Hime Associates Division
Wiss, Janney, Elstner Associates, Inc.
Northbrook, Illinois

Basic Differences and Similarities Between Background, Admixed and Alien Chloride Ions in Reinforced Concrete
Ted E. Webster, President, Webster Engineering Associates, Inc., Cleveland, Ohio

Chloride Penetration in Prestressed Concrete Specimens Subjected to an Aggressive Deicing Salt Exposure
Randall W. Poston, Research Engineer Associate, University of Texas, Austin, Texas; John E. Breen, Nasser I. Al-Rashid Chair in Civil Engineering, University of Texas, Austin, Texas; Ramon L. Carasquillo, Associate Professor of Civil Engineering, University of Texas, Austin, Texas

Chlorides in Parking Structures

The Penetration of Chlorides Into the Concrete of Road Bridges
G. Neth, Director, Institute for Buildings, Aachen, West Germany

The Effects of Cementitious Blast-Furnace Slag in Concrete on Chloride Permeability
Jere H. Rose, Manager-Technical Services, Atlantic Cement Company, Inc., Stamford, Connecticut

Cathodic Protection of Rebar in Concrete Using Conductive Coatings
Joseph A. Lehmann, President, Porter Corrosion Control Services, Inc., Houston, Texas

Some Chemical and Physical Aspects About Phenomena of Chloride-Induced Corrosion
FRIDAY, March 29, 1985
9:00 am-12:00 pm
Room: Colorado E

USE OF COMPUTERS FOR STATISTICAL ANALYSIS OF TEST DATA
Sponsored by Committee 214

Session Chairman: Tarun R. Naik and
V. Ramakrishnan
Department of Civil Engineering
University of Wisconsin
Milwaukee, Wisconsin

Analysis of In-Place Test Data Using Spreadsheet Software
Nicholas J. Carino, Research Engineer, National Bureau of Standards,
Gaithersburg, Maryland

Computerized CUSUM Quality Control for Concrete
Ken W. Day, Managing Director, Concrete Advice Pty. Ltd., Croydon,
Australia

Analysis of Maturity/Pullout Testing Data
R. L. Dilly, Assistant Professor, University of Houston, Houston, Texas;
Vahid Beizai, Project Manager, MRA/Materials Engineers Inc., Houston,
Texas; Woodward L. Vogt, President, MRA/Materials Engineers Inc.,
Houston, Texas

Analysis of Pachometer Data
Donald E. Dixon, Materials Consultant, Chastain Forensics Corp.,
Tucker, Georgia

Analyzing and Predicting Concrete Cylinder Strengths Using Two Computer Programs (in accordance with ACI 214-77)
Frances M. Kelsi, Civil Engineer, Corps of Engineers, New Orleans,
Louisiana

Development of Prediction Relations from Compression Test Data Using Regression Analysis
Chetan G. Date, Adjunct Faculty, Arizona State University, Chandler,
Arizona; Russell H. Schnormeier, Supervisor, City of Phoenix, Phoenix,
Arizona

Computer Analysis and Plotting of Concrete Data
Bruce A. Suprenant, Associate Professor, University of Wyoming,
Laramie, Wyoming; Kent Barnes, Project Engineer, L. C. Hanson & Associates, Helena, Montana
FRIDAY, March 29, 1985
9:00 am-12:00 pm

INELASTIC RESPONSE OF CONCRETE STRUCTURES
Sponsored by Committee 442

Session Chairman: Mark Fintel
Consulting Engineer
Glenview, Illinois

Inelastic Approach - Why Do We Need It and What Are The Benefits?
Mark Fintel, Consulting Engineer, Glenview, Illinois

Generalized Procedure for the Inelastic Dynamic Approach
S. K. Ghosh, Professor of Civil Engineering, University of Illinois,
Chicago, Illinois

Earthquake Ground Motions
Stuart D. Werner, Agbadian Associates, El Segundo, California

Analysis Modeling and Computer Programs
W. Schnobrich, Professor of Civil Engineering, University of Illinois,
Urbana, Illinois

Approximate Methods
M. Salidi, Professor of Civil Engineering, University of Nevada, Reno,
Nevada

Concepts of System Behavior and Design
Peter Mueller, Professor of Civil Engineering, Lehigh University,
Lehigh, Pennsylvania

Proportioning and Detailing of Members
Daniel Abrams, Associate Professor of Civil Engineering, University of
Illinois, Urbana, Illinois

Nonlinear Foundation Effects
Arthur Hucklebridge, Professor of Civil Engineering, Case University,
Cleveland, Ohio
FRIDAY, March 29, 1985
9:00 am-12:00 pm

TILT UP CONSTRUCTION
Sponsored by Committee 551

Session Chairman: Donald Musser
Portland Cement Association
Skokie, Illinois

Introduction:
Donald Musser, Portland Cement Association, Skokie, Illinois

Tilt Up Building in the Southeast
Joe Varon, Haskell Company, Jacksonville, Florida

Tilt Up Buildings in Denver
Andre Ciavola, Contractor, Denver, Colorado

Connections
Gerry Weiler, Bianco Engineering, Vancouver, Canada

Seismic Design Considerations
Ben Schmid, Pasadena, California

Repairing Tilt Up Panels
Alfred Perez, Irving, Texas
SPouse PROGRAM

SUNDAY, March 24, 1985
5:30 pm- 7:00 pm Wine & Cheese — Denver Marriott—City Center
Sponsored by Rocky Mountain Chapter

MONDAY, March 25, 1985
8:30 am- 2:00 pm Hospitality Room — Hostess available
  to answer questions. (Coffee & rolls
  8:30-10:00 am)
10:00 am-11:00 am Orientation Program
  Your hostess will give you an overview of the city of Denver and will share shopping hints,
  and information on entertainment and cultural places to visit.
11:00 am and 2:00 pm Guided Walking Tour (Cost $6.00)
  The two-hour walking tour features Union Station, the interior of the Oxford Hotel and
  the nationally renowned Larimer Square.
  Non-Guided Walking Tour (without charge)
  Maps will be provided so that you can either walk or ride the "free shuttle service" to
  explore the 16th Street Mall and Tabor Center shops.
3:00 pm- 5:00 pm Spouse Wine & Cheese Open House
  Hosted by ACI President & Mrs. Martin

TUESDAY, March 26, 1985
8:30 am- 2:00 pm Hospitality Room — Hostess available to
  answer questions. (Coffee & rolls
  8:30-10:00 am)
10:00 am-11:00 am Historic Denver Orientation
  Your hostess, representing the Historic Denver Society, will open a door to the past with
  information on historic Denver.
11:30 am- 4:15 pm Historic Denver Tour/Luncheon at Buckhorn Exchange (cost $30.00)
  On this historic tour, you will visit the landmark where the Unsinkable Molly Brown
  once lived and then continue on to see Denver's oldest house built in 1859 made of
  handhewn logs in the Four Mile Historic Park.
  Lunch will be at the Buckhorn Exchange, originally built as a stagecoach inn in 1886.
  After lunch you will conclude your day with a tour of the city of Denver before returning to
  the hotel.
WEDNESDAY, March 27, 1985

8:30 am - 2:00 pm  Hospitality Room — Hostess available to answer questions. (Coffee & rolls 8:30-10:00 am)

8:30 am-11:00 am  Champagne Breakfast/Color & Fashion Seminar (cost $20.00)
Enjoy a champagne breakfast at Craig Morton’s Restaurant in the heart of the leading shopping district in Denver, which includes a fashion show and a slide presentation on guidelines for great clothing choices and coordination.

1:30 pm- 4:45 pm  Natural History Museum and I-MAX Theatre/Tea at the Oxford (cost $15.00)
You will begin with a tour of the Natural History Museum, the 7th largest in the U.S. featuring three floors of dioramas, prehistoric fossils and minerals and the Gates Planetarium. For your viewing pleasure there will be the movie “Grand Canyon” on a 5-story high screen in the I-MAX Theatre.

Before your return to the hotel at 4:45 pm, you will stop at the Oxford Hotel for an “English Style” tea with pastries.

THURSDAY, March 28, 1985

8:30 am - 2:00 pm  Hospitality Room — Hostess available to answer questions. (Coffee & rolls 8:30-10:00 am)

9:00 am-12:00 pm  General Session (all are invited)

1:30 pm- 5:30 pm  Tour/Central City Colorado (cost $18.00)
Visit Central City, a mining boom town of the 1860’s, located in the mountains at an elevation of 8,500 feet. Your tour will also include a visit to the Teller House Hotel which contains Victorian furnishings, the famous Face on the Bar Room Floor and the bridal suite of Baby Doe Tabor.

To end your afternoon in the mountains, a wine and cheese snack at the Teller House will be served at 3:45 pm prior to your 4:30 pm departure.

FRIDAY, March 29, 1985

8:30 am-10:00 am  Hospitality Room — Coffee & rolls and time to say “Good-Bye” to our friends.
NOTE: In addition to these conference rooms ACI is utilizing a number of suites in the hotel for committee meetings. Please refer to the program for suite room numbers.
1. Denver Art Museum
2. Civic Center
3. State Capitol
4. Denver Public Library
5. U.S. Denver Mint
6. Currigan Exhibition Hall
7. City Auditorium
8. Denver Center for the Performing Arts
9. Larimer Square
10. Bus Terminal
11. Union Station